

LISTING OF THE CLAIMS

The following listing of the claims is provided for the convenience of the Examiner.

1. (previously presented) A method for bending a preformed thermoplastic polymer extrusion window frame comprising at least one cavity to make a curved polymer extrusion, the method comprising:

providing said preformed thermoplastic polymer extrusion comprising vinyl polymer;

filling at least one said cavity with polymer foam formed within said cavity;

curing said polymer foam within said at least one cavity, wherein said polymer foam has a density of about 16 kg per cubic meter to about 320 kg per cubic meter;

heating said extrusion to a first temperature;

bending said heated extrusion on a curved mandrill;

cooling said extrusion to a second temperature on said mandrill to make a curved polymer extrusion; and

removing said cooled curved polymer extrusion from said mandrill.

2. (original) The method of claim 1 wherein said polymer foam is polyisocyanate-based.

3. (original) The method of claim 2 wherein said polymer foam is polyurethane foam.

4. (previously presented) The method of claim 3 wherein said polyurethane foam is rigid closed-cell foam, semi-rigid closed-cell/open-cell foam or flexible open-cell foam.

5. (original) The method of claim 1 wherein said first temperature is the heat deflection temperature of the preformed polymer extrusion.

6. (original) The method of claim 1 wherein said second temperature is at least about 10 degrees Celsius less than the heat deflection temperature of the preformed polymer extrusion.

7. (cancelled).

8. (original) The method of claim 1 wherein said extrusion is heated to said first temperature in a glycol bath.

9. (withdrawn) The method of claim 1 wherein said extrusion is heated to said first temperature by infrared radiation.

10. (withdrawn) The method of claim 1 wherein said extrusion is heated to said first temperature by heated air.

11. (cancelled).

12. (previously presented) The method of claim 1 wherein each said cavity is filled with foam by injection from a mixing head of a plurality of ingredients comprising polyisocyanate, at least one active hydrogen-containing compound, and a blowing agent.

13. (withdrawn) The method of claim 1 wherein each said cavity is filled with foam by hand pouring into each said cavity a plurality of ingredients comprising polyisocyanate, at least one active hydrogen-containing compound, and a blowing agent.

14. (previously presented) A method for bending a preformed vinyl extrusion window frame comprising at least one cavity to make a curved vinyl extrusion, the method comprising:

providing said preformed vinyl extrusion comprising vinyl polymer thermoplastic;
filling at least one said cavity with polyurethane foam formed within said cavity;
curing said polyurethane foam within said at least one cavity, wherein said cured polyurethane foam has a density of less than about 320 kg per cubic meter;
heating said extrusion to about 70 degrees Celsius;
bending said heated extrusion on a curved mandrill;
cooling said extrusion to a temperature less than about 60 degrees Celsius on said mandrill to make a curved polymer extrusion; and
removing said cooled curved polymer extrusion from said mandrill.

15. (original) The method of claim 14 wherein said extrusion is heated by immersion in a glycol bath maintained at about 70 degrees Celsius.

16. (withdrawn) The method of claim 14 wherein said extrusion is heated by infrared radiation.

17-20. (cancelled).

21. (previously presented) A method for bending a preformed vinyl polymer thermoplastic extrusion to manufacture a window frame, the method comprising:

providing said preformed vinyl polymer thermoplastic extrusion;
filling at least one cavity in said preformed vinyl polymer thermoplastic extrusion with a support foam formed within said cavity;
curing said support foam within said at least one cavity, wherein the cured support foam comprises a density of less than about 320 kg per cubic meter;

heating said extrusion to at least a heat deflection temperature of said extrusion; bending said heated extrusion on a curved mandril;

cooling said heated extrusion to at least 10 degrees Celsius below the heat deflection temperature of said extrusion; and

removing said cooled extrusion from said mandril.

22. (previously presented) The method of claim 21, comprising selecting ingredients of said support foam to provide said density to substantially stabilize said extrusion.

23. (previously presented) The method of claim 21, wherein heating comprises heating said extrusion to generate temperature gradients within said extrusion such that portions of said extrusion that experience greater stress during bending are higher in temperature than remaining portions of said extrusion during bending.

24. (previously presented) The method of claim 21, wherein bending comprises bending said heated extrusion into an arch shape.

25. (previously presented) The method of claim 21, wherein said extrusion comprises a component of the window frame.